



STATE OF MAINE  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
17 STATE HOUSE STATION AUGUSTA, MAINE 04333-0017

DEPARTMENT ORDER

**General Electric Company  
d/b/a GE Energy  
Penobscot County  
Bangor, Maine  
A-404-71-V-M**

**Departmental  
Findings of Fact and Order  
Air Emission License  
Amendment #1**

**FINDINGS OF FACT**

After review of the air emission license amendment application, staff investigation reports, and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 Maine Revised Statutes (M.R.S.) § 344 and § 590, the Maine Department of Environmental Protection (Department) finds the following facts:

**I. REGISTRATION**

A. Introduction

General Electric Company d/b/a GE Energy (GE) was issued Air Emission License A-404-71-U-R on October 29, 2014, for the operation of emission sources associated with their turbine manufacturing facility.

GE has requested a minor revision to their license in order to correct the physical location of Boiler #3 and Stress Relief Furnace #1.

In addition, the Department is taking this opportunity to update the applicable visible emissions limits for the facility's equipment and the facility's potential to emit (PTE) for sulfur dioxide (SO<sub>2</sub>).

This license covers two physical sites both located in Bangor, Maine. The Griffin Road location consists of Buildings 10, 15, 20, 30, and 40. The Maine Avenue location consists of Buildings 45, 50, 60, 70, 75, and 80. Due to operational demands and production needs, equipment may occasionally be moved from one facility to the other in an effort to run efficiently and optimize production.

B. Emission Equipment

The following equipment is addressed in this air emission license amendment:

**Boilers**

<b>Equipment</b>	<b>Maximum Heat Input (MMBtu/hr)</b>	<b>Maximum Firing Rate</b>	<b>Fuel Type, % sulfur</b>	<b>Date of Manuf.</b>	<b>Stack #</b>
Boiler #1	3.6	3,530 scfh 25.7 gal/hr	natural gas, negligible distillate fuel, 0.0015%	1993	Bldg 30, #1
Boiler #2	3.6	3,530 scfh 25.7 gal/hr	natural gas, negligible distillate fuel, 0.0015%	1993	Bldg 30, #2
Boiler #3	2.1	2,059 scfh 15.0 gal/hr	natural gas, negligible distillate fuel, 0.0015%	1981	Bldg 20, #3
Boiler #4	7.0	50.0 gal/hr	distillate fuel, 0.0015%	1960	Bldg 20, #4
Boiler #5	5.0	4,902 scfh 35.7 gal/hr	natural gas, negligible distillate fuel, 0.0015%	2000	Bldg 10, #5
Boiler #6	5.0	4,902 scfh 35.7 gal/hr	natural gas, negligible distillate fuel, 0.0015%	2000	Bldg 10, #5
Boiler #7	3.4	3,333 scfh 24.3 gal/hr	natural gas, negligible distillate fuel, 0.0015%	1981	Bldg 45, #6
Boiler #8	3.4	3,333 scfh 24.3 gal/hr	natural gas, negligible distillate fuel, 0.0015%	1981	Bldg 45, #6
Boiler #9	3.4	3,333 scfh 24.3 gal/hr	natural gas, negligible distillate fuel, 0.0015%	1994	Bldg 45, #6

**Stress Relief Furnaces**

<b>Equipment</b>	<b>Maximum Heat Input (MMBtu/hr)</b>	<b>Maximum Firing Rate</b>	<b>Fuel Type, % sulfur</b>	<b>Date of Manuf.</b>	<b>Stack #</b>
Stress Relief Furnace #1	9.0	8,824 scfh	natural gas, negligible	1995	Bldg 70, #453
Stress Relief Furnace #2	4.75	4,657 scfh	natural gas, negligible	1997	Bldg 50, #511
Stress Relief Furnace #3	4.74	4,647 scfh	natural gas, negligible	2001	Bldg 50, #512

### Emergency Generators

Equipment	Maximum Heat Input (MMBtu/hr)	Maximum Firing Rate	Fuel Type, % sulfur	Date of Manuf.
Generator #1	0.54	3.9 gal/hr	distillate fuel, 0.0015%	2002
Generator #2	1.0	1020 scfh	natural gas, negligible	April 2008

#### C. Revision Description

##### 1. Equipment Relocation

In Air Emission License A-404-71-U-R (10/29/2014), Boiler #3 is associated with Building 30. GE has requested that it be noted that Boiler #3 is currently located in Building 20.

In Air Emission License A-404-71-U-R (10/29/2014), Stress Relief Furnace #1 is associated with Building 45. GE has requested that it be noted that Stress Relief Furnace #1 has been moved to Building 70.

##### 2. Visible Emission Limits

Since issuance of GE's current air emission license, changes have been promulgated to *Visible Emissions Regulation*, 06-096 C.M.R. ch. 101. The requirements in the updated rule may be more stringent than those currently listed in GE's license, and/or the currently applicable standard may be unclear. Therefore, visible emission limits for specific equipment are addressed in the Best Practical Treatment section below.

##### 3. Sulfur Dioxide PTE

The SO<sub>2</sub> PTE listed in Air Emission License A-404-71-U-R (10/29/2014) is based on the boilers firing up to 500,000 gal/year of distillate fuel with a sulfur content not to exceed 0.5% by weight. As addressed in that license, the sulfur content of distillate fuel sold in Maine has since been lowered to no more than 15 ppm (0.0015% by weight). The PTE for SO<sub>2</sub> has been updated accordingly in the fee table below.

#### D. Application Classification

All rules, regulations, or statutes referenced in this air emission license refer to the amended version in effect as of the date this license was issued.

This amendment will not increase licensed emissions of any pollutant. Therefore, this amendment is determined to be a minor revision and has been processed as such.

E. Facility Classification

With the annual facility-wide limits on volatile organic compounds (VOC) and hazardous air pollutants (HAP), the facility is licensed as follows:

- As a synthetic minor source of air emissions for VOC, because GE is subject to license restrictions that keep facility emissions below major source thresholds for criteria pollutants; and
- As an area source of hazardous air pollutants (HAP), because the licensed emissions are below the major source thresholds for HAP.

**II. BEST PRACTICAL TREATMENT (BPT)**

A. Introduction

In order to receive a license, the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in *Definitions Regulation*, 06-096 C.M.R. ch. 100. Separate control requirement categories exist for new and existing equipment.

BPT for existing emissions equipment means that method which controls or reduces emissions to the lowest possible level considering:

- the existing state of technology;
- the effectiveness of available alternatives for reducing emissions from the source being considered; and
- the economic feasibility for the type of establishment involved.

B. Visible Emissions

1. Boilers

The boilers are subject to the following visible emission limit established under a previous BPT analysis:

Visible emissions from each boiler stack shall not exceed 20% opacity on a six (6) minute block average, except for no more than one (1) six (6) minute block average in a continuous 3-hour period.

The boilers fire either natural gas or distillate fuel, and some exhaust to combined stacks. Therefore, the boilers are subject to the following visible emission standards pursuant to 06-096 C.M.R. ch. 101:

Visible emissions from any stack used to exhaust a single distillate-fired boiler shall not exceed 20% opacity on a six-minute block average basis.  
[06-096 C.M.R. ch. 101, § 3(A)(2)]

Visible emissions from any stack used to exhaust a single natural gas-fired boiler shall not exceed 10% opacity on a six-minute block average basis.  
[06-096 C.M.R. ch. 101, § 3(A)(3)]

Visible emissions from any stack used to exhaust multiple boilers shall not exceed 30% opacity on a six-minute block average basis. except for periods of startup, shutdown, or malfunction, during which times GE may elect to comply with the work practice standards of Sections 4(A) of the rule.  
[06-096 C.M.R. ch. 101, § 3(D)(1)]

With this license amendment, the Department is establishing the following revised BPT for visible emissions from the boilers:

Visible emissions from each stack being used to exhaust a distillate-fired boiler, either alone or in conjunction with other distillate- or natural gas-fired boilers, shall not exceed 20% opacity on a six-minute block average basis.

Visible emissions from each stack used to exhaust only natural gas-fired boilers, either alone or in conjunction with other natural gas-fired boilers, shall not exceed 10% opacity on a six-minute block average basis.

The Department has determined that the revised BPT visible emission limits for the boilers are more stringent than the previous BPT limit and the applicable limits in 06-096 C.M.R. ch. 101. Therefore, the visible emission limits for the boilers have been streamlined to the more stringent limits, and only these more stringent limits shall be included in the air emission license.

## 2. Stress Relief Furnaces

The stress relief furnaces are subject to the following visible emission limit established under a previous BPT analysis:

Visible emissions from each stress relief furnace stack shall not exceed 20% opacity on a six (6) minute block average, except for no more than one (1) six (6) minute block average in a continuous 3-hour period.

In 06-096 C.M.R. ch. 101, the stress relief furnaces are considered “other fuel burning equipment” which fire natural gas and exhaust to their own dedicated stacks. Therefore, the stress relief furnaces are subject to the following visible emission standard pursuant to 06-096 C.M.R. ch. 101, § 3(A)(6):

Visible emissions shall not exceed an opacity of 30% on a six- minute block average basis, except for periods of startup, shutdown, or malfunction, during which times the owner or operator may elect to comply with the work practice standards of Sections 4(A) of the rule.

With this license, the Department is establishing the following revised BPT for visible emissions from the stress relief furnaces:

Visible emissions from each stress relief furnace, shall not exceed 20% opacity on a six-minute block average basis.

The Department has determined that the revised BPT visible emission limits for the stress relief furnaces is more stringent than the previous BPT limit and the applicable limit in 06-096 C.M.R. ch. 101. Therefore, the visible emission limit for the stress relief furnaces has been streamlined to the more stringent limit, and only this more stringent limit shall be included in the air emission license.

3. Generator #1

Generator #1 is subject to the following visible emission limit established under a previous BPT analysis:

Visible emissions from Generator #1 shall not exceed 20% opacity on a 6-minute block average, except for no more than two (2) six (6) minute block averages in a 3 hour period.

Generator #1 fires distillate fuel and is subject to the following visible emission standard pursuant to 06-096 C.M.R. ch. 101, § 3(A)(4):

Visible emissions shall not exceed 20% opacity on a six-minute block average basis except for periods of startup during which time the owner or operator may comply with the following work practice standards in lieu of the numerical visible emissions standard.

- a. Maintain a log (written or electronic) of the date, time, and duration of all generator startups.
- b. Operate the generator in accordance with the manufacturer’s emission-related operating instructions.

- c. Minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations shall apply.
- d. Operate the generator, including any associated air pollution control equipment, at all times in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Department that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the unit.

The Department has determined that the applicable standard contained in 06-096 C.M.R. ch. 101 is more stringent than the previous BPT limit. Therefore, the visible emission limit for Generator #1 has been streamlined to the more stringent standard, and only this more stringent limit shall be included in the air emission license.

#### 4. Generator #2

Generator #2 is subject to the following visible emission limit established under a previous BPT analysis:

Visible emissions from Generator #2 shall not exceed 10% opacity on a 6-minute block average basis, except for no more than one (1) six (6) minute block average in a 3 hour period.

Generator #2 fires natural gas and is subject to the following visible emission standard pursuant to 06-096 C.M.R. ch. 101, § 3(A)(4):

Visible emissions shall not exceed 20% opacity on a six-minute block average basis except for periods of startup during which time the owner or operator may comply with the following work practice standards in lieu of the numerical visible emissions standard.

- a. Maintain a log (written or electronic) of the date, time, and duration of all generator startups.
- b. Operate the generator in accordance with the manufacturer's emission-related operating instructions.
- c. Minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the

engine, not to exceed 30 minutes, after which time the non-startup emission limitations shall apply.

- d. Operate the generator, including any associated air pollution control equipment, at all times in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Department that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the unit.

With this license, the Department is establishing the following revised BPT for visible emissions from Generator #2:

Visible emissions from Generator #2 shall not exceed 10% opacity on a six-minute block average basis except for periods of startup during which time GE may comply with the following work practice standards in lieu of the numerical visible emissions standard.

- a. Maintain a log (written or electronic) of the date, time, and duration of all generator startups.
- b. Operate the generator in accordance with the manufacturer's emission-related operating instructions.
- c. Minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations shall apply.
- d. Operate the generator, including any associated air pollution control equipment, at all times in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Department that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the unit.

The Department has determined that the revised BPT visible emission limit for Generator #2 is more stringent than the previous BPT limit and the applicable limit in 06-096 C.M.R. ch. 101. Therefore, the visible emission limit for Generator #2 has been streamlined to the more stringent limit, and only this more stringent limit shall be included in the air emission license.



C. Annual Emissions

The table below provides an estimate of facility-wide annual emissions for the purposes of calculating the facility’s annual air license fee and establishing the facility’s potential to emit (PTE). Only licensed equipment is included, i.e., emissions from insignificant activities are excluded. Similarly, unquantifiable fugitive particulate matter emissions are not included except when required by state or federal regulations. Maximum potential emissions were calculated based on the following assumptions:

- Firing 58.8 million scf/year of natural gas in the boilers and stress relief furnaces;
- Firing 500,000 gal/year of distillate fuel with a sulfur content of 0.0015% by weight in the boilers;
- Operating the generators for 100 hr/year each; and
- Facility-wide limits for VOC and HAP.

Please note, this information should not be construed to represent a comprehensive list of license restrictions or permissions. That information is provided in the Order section of this license.

**Total Licensed Annual Emissions for the Facility**  
**Tons/year**  
(used to calculate the annual license fee)

	PM	PM <sub>10</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	VOC	Total HAP
Natural Gas Use	0.8	0.8	0.1	2.9	0.2	0.2	–
Distillate Fuel Use	4.2	4.2	0.1	5.0	1.3	0.1	–
Generator #1	–	–	–	0.1	0.1	–	–
Generator #2	–	–	–	0.1	0.1	–	–
Fugitive	–	–	–	–	–	8.0	8.0
<b>Total TPY</b>	<b>5.0</b>	<b>5.0</b>	<b>0.2</b>	<b>8.1</b>	<b>4.0</b>	<b>8.3</b>	<b>8.0</b>

**ORDER**

Based on the above Findings and subject to conditions listed below, the Department concludes that the emissions from this source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards, and
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License Amendment A-404-71-V-M subject to the conditions found in Air Emission License A-404-71-U-R and the following conditions.

Severability. The invalidity or unenforceability of any provision of this License Amendment or part thereof shall not affect the remainder of the provision or any other provisions. This License Amendment shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

**SPECIFIC CONDITIONS**

**The following shall replace Condition (16)(D) of Air Emission License A-404-71-U-R:**

**(16) Boilers**

**D. Visible Emissions**

1. Visible emissions from each stack being used to exhaust a distillate-fired boiler, either alone or in conjunction with other distillate- or natural gas-fired boilers, shall not exceed 20% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BPT]
2. Visible emissions from each stack used to exhaust only natural gas-fired boilers, either alone or in conjunction with other natural gas-fired boilers, shall not exceed 10% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BPT]

**The following shall replace Condition (17)(C) of Air Emission License A-404-71-U-R:**

**(17) Stress Relief Furnaces**

- C. Visible emissions from each stress relief furnace, shall not exceed 20% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BPT]

**The following shall replace Condition (19)(D) of Air Emission License A-404-71-U-R:**

**(19) Generator #1**

- D. Visible emissions from Generator #1 shall not exceed 20% opacity on a six-minute block average basis except for periods of startup during which time GE may comply with the following work practice standards in lieu of the numerical visible emissions standard. [06-096 C.M.R. ch. 101, § 3(A)(4)]
1. Maintain a log (written or electronic) of the date, time, and duration of all generator startups.
  2. Operate the generator in accordance with the manufacturer's emission-related operating instructions.
  3. Minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations shall apply.
  4. Operate the generator, including any associated air pollution control equipment, at all times in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Department that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the unit.

**The following shall replace Condition (20)(F) of Air Emission License A-404-71-U-R:**

**(20) Generator #2**

- F. Visible emissions from Generator #2 shall not exceed 10% opacity on a six-minute block average basis except for periods of startup during which time GE may comply with the following work practice standards in lieu of the numerical visible emissions standard. [06-096 C.M.R. ch. 115, BPT]
1. Maintain a log (written or electronic) of the date, time, and duration of all generator startups.
  2. Operate the generator in accordance with the manufacturer's emission-related operating instructions.

3. Minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations shall apply.
4. Operate the generator, including any associated air pollution control equipment, at all times in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Department that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the unit.

DONE AND DATED IN AUGUSTA, MAINE THIS 11<sup>th</sup> DAY OF MAY, 2022.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:  for  
MELANIE LOYZIM, COMMISSIONER

**The term of this amendment shall be concurrent with the term of Air Emission License A-404-71-U-R.**

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 4/27/2022

Date of application acceptance: 4/27/2022

Date filed with the Board of Environmental Protection:

This Order prepared by Lynn Muzzey, Bureau of Air Quality.

